

Message Text

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ACTION ACDA-12

INFO OCT-01 EA-12 ISO-00 NSCE-00 SSO-00 INRE-00
CIAE-00 INR-10 IO-14 L-03 NSAE-00 EB-08 NRC-07
OES-07 SOE-02 DODE-00 DOE-11 SS-15 SP-02 CEQ-01
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O 210547Z FEB 78
FM AMEMBASSY TOKYO
TO SECSTATE WASHDC IMMEDIATE 5405
INFO DOE WASHDC IMMEDIATE
DOE GERMANTOWN MD IMMEDIATE

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E.O. 11652: N/A
TAGS: ENRG, TECH, PARM,JA
SUBJECT: SAFEGUARDS INSTRUMENTATION PROGRAM AT TOKAI MURA

REF: A. STATE 4667; B. TOKYO 2176

1. FOLLOWING ARE PNC VIEWS ON US PROPOSAL (REFTEL A) FOR
SAFEGUARDS INSTRUMENTATION TESTING AT TOKAI MURA REPROCESSING
PLANT. VIEWS ARE PRELIMINARY AND SUBJECT TO CHANGE AFTER
FURTHER INFO AND DETAILS OBTAINED FROM US SIDE NEXT WEEK.

2. GENERAL PNC COMMENTS:

A. IT IS OUR UNDERSTANDING THAT THE UNITED STATES IS PREPARED
TO PARTICIPATE IN THE TESTING PROGRAM OF ADVANCED SAFEGUARDS
INSTRUMENTATION OF JAPAN-IAEA COOPERATIVE RESEARCH AGREEMENT.
ASSISTANCE AND RECOMMENDATIONS BY US EXPERTS ARE QUITE WELCOME,
BECAUSE WE BELIEVE THAT IMPROVEMENTS IN EFFECTIVENESS BOTH FOR
PRIME PURPOSE OF INTERNATIONAL SAFEGUARDS AND FOR LOWERING
COSTS OF THE AGENCY AS WELL AS OF THE OPERATORS ARE
DESIRABLE.

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B. CONSIDERATION SHOULD BE GIVEN TO MINIZING
INTERFERENCE WITH THE PLANT OPERATION AND TO THE PROTECTION
OF INDUSTRIAL CONFIDENTIALITIES OF OUR OWN AND SGN, WHO
ASSISTED PNC IN DESIGN AND CONSTRUCTION OF THE TOKAI
FACILITY.

C. MAINTAINANCE OF SAFE PLANT OPERATION IS OUR PRIMARY

CONCERN. MODIFICATION OF THE PLANT EQUIPMENT AND NEW INSTALLATION OF KEY INSTRUMENTATION REQUIRE THAT AN APPLICATION FOR LICENSE BE SUBMITTED TO THE NUCLEAR SAFETY BUREAU. THEREFORE SCHEDULING OF THE TESTS HAS TO BE PRACTICAL.

D. BEARING OF ADDITIONAL COSTS SHOULD BE DISCUSSED IN THE MEETING.

3. VIEWS ON THE INDIVIDUAL US PROPOSALS:

A. EVALUATION OF PERFORMANCE AND APPLICATION OF SURVEILLANCE DEVICES IN THE SPENT FUEL RECEIVING AREA. SOME SURVEILLANCE DEVICES EXCEPT GAMMA DETECTORS FOR SPENT FUEL TRANSFER TO MECHANICAL CELL AND FLOOR MOUNTED LOAD CELL DETECTORS FOR CASK TRANSPORT ARE ALREADY INSTALLED IN THE FACILITY UNDER THE COOPERATIVE AGREEMENT WITH IAEA. DISCUSSIONS ON THE USEFULNESS OF THE TWO ADDITIONAL DETECTION SYSTEMS AND POSSIBLE INSTALLATIONS ARE WELCOME. PNC HAS NO OBJECTION FOR FUTURE INSTALLATIONS PROVIDED THAT THEY DO NOT REQUIRE SIGNIFICANT DISTURBANCE OF PROJECTED PLANT OPERATION.

B. COLLECTION AND ANALYSIS OF GAMMA SPECTRA OF IRRADIATED FUEL ASSEMBLIES MEASURED AT THE STORAGE POND.

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EXISTING RESEARCH AGREEMENT WITH IAEA ON THIS SUBJECT IS CARRIED OUT BY JAERI WITH SUPPORTING PNC ACTIVITIES. THE GAMMA SPECTROMETRY IS DONE IN THE JPDR SPENT FUEL POND, WHICH IS NOT APRGBWR AND PWR FUEL ASSEMBLIES OWING TO THE SPECIFIC CONFIGURATION OF TMD EQUIPMENT.

SAMPLES FOR EACH SOLUTION BATCH OF JPDR FUEL ARE TO BE CHEMICALLY ANALYSED IN THE ANALYTICAL LABORATORY OF PNC REPROCESSING FACILITY, BUT THE SCHEDULE IS DELAYED OWING TO LIMITED CAPACITY FOR CHEMICAL ANALYSIS. PROPOSAL H. IS INTERESTING FROM THIS POINT. DISCUSSIONS AND PRELIMINARY DESIGN FOR FUTURE INSTALLATION OF GAMMA SPECTROMETRY EQUIPMENT IN THE RECEIVING POND ARE OF INTEREST TO US.

C. DEMONSTRATION OF HULL-MONITORING SYSTEM.
EXISTING HULL-MONITORING IS A NON-DESTRUCTIVE MEASUREMENT OF GAMMA-RAYS FROM PR-144. COMPARISON WITH OTHER TYPES OF NDA SUCH AS PASSIVE AND ACTIVE NEUTRON METHODS

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C O R R E C T E D C O P Y (PARA F. CORRECTED)

ARE USEFUL.

D. DEMONSTRATION OF INSTRUMENTAL TECHNIQUE FOR
MEASUREMENT OF SOLUTION WEIGHT IN THE ACCOUNTABILITY
VESSEL(LOAD CELL).
EFFECTS OF RADIATION AND TEMPERATURE ON THE READ-OUT
OF EXISTING LOAD CELLS ARE OF CONCERN TO US. US
ASSISTANCE FOR EVALUATION AND ANALYSIS IS WELCOME.
AUTOMATION BY LINKING ELECTRONICS DEVICE IS A DESIRABLE
MEANS FOR OBTAINING A TAMPER PROOF SYSTEM.

E. DEMONSTRATION OF INSTRUMENTED TECHNIQUES FOR
MEASUREMENT OF SOLUTION VOLUME IN ACCOUNTABILITY VESSELS
(ELECTROMANOMETER).
WATER MANOMETERS ARE INSTALLED IN THE FACILITY.
ELECTROMANOMETERS ARE AVAILABLE IN JAPAN, AND SEVERAL
SETS ARE INSTALLED IN OTHER PNC FACILITIES. ADDITIONAL
INSTALLATIONS OR CONVERSION FROM THE EXISTING MANOMETER
SYSTEM IS DESIRABLE, BUT THEY NEED TO BE EVALUATED FOR
SAFETY AND DISTURBANCE OF PLANT OPERATION.
THE ITEM IS NOT INCLUDED IN THE PRESENT JAPAN-IAEA
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RESEARCH AGREEMENT.

F. SAFETY OF APPLICATION OF DYMAC PRINCIPLE TO SAFEGURDS. FEASIBILITY STUDY OF THE DYMAC SYSTEM IS ONE ITEM INCLUDED IN THE PRESENT IAEA RESEARCH AGREEMENT. US ASSISTANCE WOULD PROMOTE PROGRESS IN THE STUDY. HOWEVER ACCESS OF US ENGINEERS TO THE PRESENT FLOWSHEET IN THE FACILITY MAY HAVE TO BE DISCUSSED WITH FRENCH DELEGATE AND SGN AS PNC HAS A RESPONSIBILITY TO PROTECT THEIR INDUSTRIAL CONFIDENTIALITY ACCORDING TO THE EXISTING PNC-SNG CONTRACT.

G. K-EDGE DENSITOMETER FOR MEASURING PLUTONIUM PRODUCT CONCENTRATION.

SAFETY AND DISTURBANCE OF PLANT OPERATION AS WELL AS COSTS ARE OUR CONCERNS FOR IN-LINE INSTALLATION OF THIS SYSTEM. DETAILED EXPLANATIONS ARE DESIRABLE DURING THE MEETING. THOUGH THE ITEM IS NOT INCLUDED IN THE PRESENT IAEA RESEARCH AGREEMENT, WE HAD CONSULTATIONS ON IT WITH ONE IAEA OFFICIAL.

L-EDGE ANALYSIS SYSTEM IS ALSO OF INTEREST.

H. HIGH RESOLUTION GAMMA SPECTROMETER FOR PLUTONIUM ISOTOPIC ANALYSIS. AN ACCURATE AND RAPID MEASUREMENT FOR PLUTONIUM ISOTOPIC COMPOSITION IS DESIRABLE. OFF-LINE INSTALLATION OF THE EQUIPMENT MAY BE FEASIBLE AND FUTURE ON-LINE INSTALLATION WILL BE EVALUATED FOR ITS FEASIBILITY.

I. PRODUCT LOADOUT AREA MONITORING--CONTINUOUS ELECTRONIC SURVEILLANCE SYSTEM.

NECESSITY FOR INSTALLATION OF SOME DEVICES FOR PRODUCT LOADOUT AREA MONITORING HAS BEEN UNDERSTOOD IN PNC. AT PRESENT THERE IS A TV SURVEILLANCE CAMERA, BUT US UNCLASSIFIED

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RECOMMENDATIONS AND ASSISTANCE IN ENGINEERING DESIGN IS WELCOME. ACTUAL IMPLEMENTATION DEPENDS UPON DEGREE OF FACILITY MODIFICATION REQUIRED.

J. RESIN READ SAMPLING AND ANALYTICAL TECHNIQUE. PNC HAS ALMOST NO INFORMATION ON THIS NEW TECHNIQUE. TRAINING OF PNC PERSONNEL WOULD BE WELCOME. THIS ITEM WOULD ALSO BE OF INTEREST TO JAERI.

K. ISOTOPIC SAFEGUARDS TECHNIQUES (IST). MAN-POWER AVAILABILITY AND CAPACITY OF MEASUREMENT OF MINOR TRACE ISOTOPES ARE PROBLEMS TO BE EVALUATED INSIDE PNC.

4. SEPTTEL FOLLOWS ON ARRANGEMENTS FOR MEETING.

MANSFIELD

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